

Appl. No. 10/736,501

### REMARKS/ARGUMENTS

#### Claim Rejections – 35 U.S.C. 112

The Examiner rejects claims 6, 8-10 and 16 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. More particularly, the Examiner objects to the expression “scheduling the low priority receiver before scheduling the high priority receiver” in claim 6. The Examiner contends that the specification and drawings teach that “the high priority receivers are scheduled before the low priority receivers”. In response, claim 6 has been amended so as to recite “scheduling the high [emphasis added] priority receivers before scheduling the low [emphasis added] priority receivers”. The Examiner states that claims 8-10 and 16 are rejected for being dependent on an indefinite claim. Applicant submits that claim 6 as amended is not indefinite and therefore claims 8-10 and 16, which depend directly or indirectly on claim 6, are not indefinite either.

The Examiner rejects claims 18 and 30 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner objects to the term “substantially” in claims 18 and 30 contending that this is a relative term and that the specification does not provide a standard for ascertaining the requisite degree for this term. In response, Applicant submits that there is no need to define the term “substantially” in claims 18 and 30. A person skilled in the art would understand the meaning of the term “substantially” in the context of claims 18 and 30. In particular, a person skilled in the art would understand that there is no requirement for the transmitter to generate a plurality of entirely fixed beams. Accordingly, Applicant has claimed the invention with language to this affect to recite that the transmitter generates a plurality of substantially fixed beams. The Examiner is respectfully requested to reconsider and withdraw the rejection of claim 18 and 30.

The Examiner further objects to claim 18 contending that there is insufficient antecedent basis for the limitation “the statically shaped beams” in line 4 of the claim. In response, claim 18 has been amended so as to replace “the statically shaped beams” with “the substantially fixed beams”.

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**Claim Rejections – 35 U.S.C. 103**

The Examiner rejects claims 1-3, 5-7, 11, 13-15, 17-22, 24-26 and 28-31 under 35 U.S.C. 103(a) as being unpatentable over United States patent No. 6,895,258 ("Scherzer") in view of United States patent application publication No. 2004/0121810 ("Goransson"). In response, Applicant provides arguments and amendments as detailed below.

**Claim 1**

The Examiner's rejection of claim 1 is rendered moot, as claim 1 has been cancelled.

**Claim 2**

Claim 2 has been amended to place it in independent form and recites the limitations from cancelled claim 1. Applicant submits that claim 2 as amended has the same scope as claim 2 as originally filed. Subsequent claims that depend upon claim 1 have been amended so as to depend upon claim 2.

Applicant respectfully traverses the Examiner's rejection of claim 2, as the Examiner has failed to meet the requirements to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Applicant's analysis below demonstrates that the Examiner has not satisfied these three basic criteria.

***Requirement to Teach or Suggest All Claim Limitations***

The Examiner contends that Scherzer discloses "wherein a minimum angle of separation constraint is imposed that requires any two receivers which are scheduled during a given scheduling interval to have angles of departure separated by at least a first minimum angle of separation". Applicant respectfully disagrees. The Examiner first looks to column 6, line 65

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through column 8, line 15 of Scherzer. However, this portion of Scherzer teaches “determining beam width [emphasis added] which may be used with respect to a subscriber system such that intra-cell interference will be reduced to a negligible level”. Accordingly, Applicant submits that Scherzer is concerned with determining an appropriate beam width which results in negligible intra-cell interference and that this is completely different than imposing a minimum angle of separation constraint.

The Examiner further refers to column 10 lines 24-60 of Scherzer. However, this portion relates to determining a beam width. In column 8, lines 43-48 Scherzer teaches that “in determining beam width parameters, a channel training sequence (or pilot) is preferably transmitted on a wide beam, such as a sector or omni-direction beam, while the probing signals transmitted on a narrow beam directed at the subscriber system”. Scherzer teaches in column 9 lines 10-14 that “it has been discovered that the phase difference between a probing signal transmitted through a narrow beam and a pilot transmitted through a sector beam, or other wider beam, is due to different scatters covered by the two beams”. Scherzer goes on to teach “to eliminate the phase difference described above, the probing signal beam width is preferably adjusted to encapsulate the “effective scatters””. Scherzer goes on to recite details in column 10. Applicant submits that the subject matter of the “phase difference” in Scherzer relates to the phase difference between the probing signal and the pilot signal, which is minimized, and that this has nothing to do with the “minimum angle of separation constraint” recited by claim 2 in the present application.

Goransson relates to using beam forming and closed loop transmit diversity in a multi-beam antenna system. As recited in the Abstract, “in controlling a multi-beam antenna system for downlink wireless communication, beam forming and closed loop transmit diversity signalling are combined” and that “each beam signal is adjusted at the transmitter based on feedback from a wireless mobile communication station such that the signals received at the wireless mobile communication station can be coherently combined”. Much like Scherzer, Goransson is silent to a “minimum angle of separation constraint” as recited by claim 2 of the present application.

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Since Scherzer and Goransson are both silent to a "minimum angle of separation constraint", Applicant submits that the requirement of teaching all limitations of the claim for establishing a *prima facie* case of obviousness has not been satisfied for claim 2.

*Requirement to Establish Motivation to Combine References*

Applicant notes that Section 2143.01 of the Manual of Patent Examining Procedure (MPEP) sets out three possible sources of motivation to combine, namely A) the nature of the problem to be solved, B) the teachings of the prior art, and C) the knowledge of persons of ordinary skill in the art. It is respectfully submitted that the Examiner has not established a motivation to combine the references from any one of the three sources.

*A. The Nature of the Problem to be Solved*

The nature of the problem to be solved in Scherzer and Goransson are quite different. The problem to be solved in Scherzer is described in column 3, lines 1-6. In particular, Scherzer states that there is a need in the art "for systems and methods which provide segregation of an area in which communications are provided to thereby provide increase capacity". Scherzer further describes that there is a need in the art "for such systems and methods to segregate the space based on multi-path conditions to thereby provide adapted segregation". By contrast the problem to be solved in Goransson, which is recited in paragraph 29, is quite different. Goransson states that it is "desirable to avoid beam pointing errors without incurring disadvantages such as mention above". Goransson describes known disadvantages earlier in the background. Applicant submits that increasing capacity of a communications system is different than avoiding beam pointing errors.

*B. the Teachings of the Prior Art*

There is no teaching, suggestion, or motivation to combine Scherzer and Goransson in the references themselves. Applicant notes that Scherzer and Goransson do not refer to one another in their disclosures. The list of references cited in Scherzer does not include Goransson, and

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Goransson has not been published with references cited. Accordingly, Applicant submits that there is no suggestion in the cited references to combine the disclosures of Scherzer and Goransson.

*C. the Knowledge of Persons of Ordinary Skill in the Art*

As clearly stated *In re Kotzab*, 55 USPQ2d 1313, 1318 "Identification of prior art statements that, in abstract, appear to suggest claimed limitation does not establish prima facie obviousness without a finding as to specific understanding or principle within knowledge of skilled artisan that would have motivated one with no knowledge of invention at issue to make combination in manner claimed" [emphasis added]. Applicant submits that the Examiner has not demonstrated suggestion in the knowledge of persons of ordinary skill in the art to combine Scherzer and Goransson in the manner claimed. Claim 2 recites features not found in Scherzer or Goransson, yet the Examiner has not demonstrated any specific understanding or principle within knowledge of a skilled artisan that would suggest combining Scherzer and Goransson in a manner that would arrive at such features of claim 2.

As clearly stated *In re Fine*, 5 USPQ2d 1596, 1600 "Patent and Trademark Office improperly rejected claimed invention for obviousness... since PTO therefore failed to satisfy its burden of establishing prima facie case of obviousness by showing some objective teaching or generally available knowledge that would lead one skilled in the art to combine teachings of existing references". Since the Examiner has not demonstrated an objective teaching or generally available knowledge that would lead one skilled in the art to combine Scherzer and Goransson in a manner that would arrive at the claimed invention, Applicant submits that the Examiner has not fulfilled his burden of establishing prima facie case of obviousness.

For at least the aforementioned reasons, Applicant submits that there cannot be motivation to combine the cited references. Therefore, Applicant respectfully submits that the requirement to establish motivation to combine references for establishing a *prima facie* case of obviousness has not been satisfied for claim 2.

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In view of the forgoing, Applicant submits that claim 2 of the present application is inventive over Scherzer and Goransson.

Claims 3, 5-7, 11, 13-15, 17-22, and 24

Applicant submits that claims 3, 5-7, 11, 13-15, 17-22, and 24 are inventive over Scherzer and Goransson for at least their dependence upon claim 2.

Claim 25

The Examiner's rejection of claim 25 is rendered moot, as claim 25 has been cancelled.

Claims 26, 28-31

Claim 26 has been amended to place it in independent form and recites the limitations from cancelled claim 25. Applicant submits that claim 26 as amended has the same scope as claim 26 as originally filed. Subsequent claims that depend upon claim 25 have been amended so as to depend upon claim 26.

Applicant submits that claim 26 is patentable over Scherzer and Goransson for similar reasons provided above in respect of claim 2. Applicant notes that claim 26 recites the "minimum angle of separation" constraint.

Applicant submits that claim 28-31 are patentable over Scherzer and Goransson for at least their dependence upon claim 26.

As all of the objections made in the Office Action have been addressed by this response, it is respectfully submitted that the application is now in condition for allowance. Applicant respectfully requests a timely Notice of Allowance to be issued in respect of this case.

If any objections remain, the Examiner is respectfully requested to telephone the undersigned with a view to resolving such objections as expeditiously as possible.

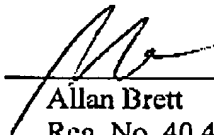
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In view of the foregoing, early favorable consideration of this application is earnestly solicited.

Respectfully submitted,

WU, Jianming et al

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RAB:PDB:kbc